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TYPEWRITER BACKING SHEET

Filed May 27, 1930

FIG. 1.

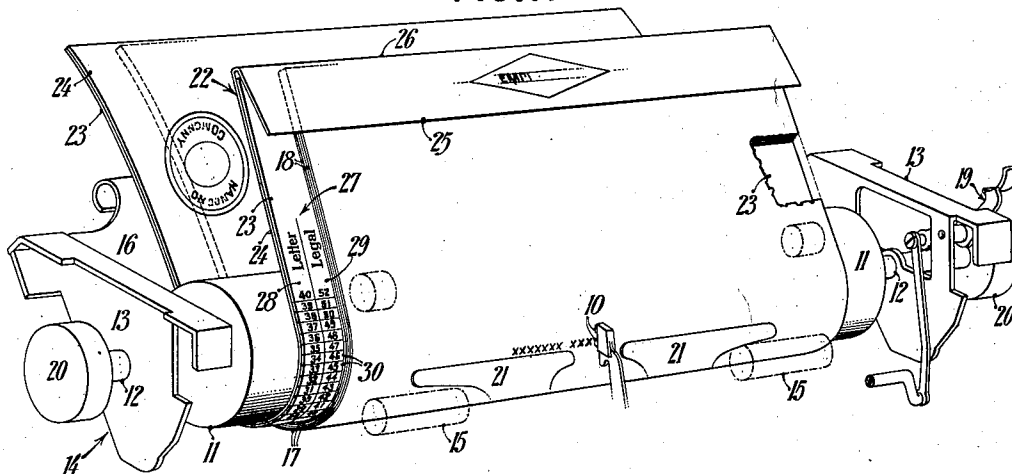


FIG. 2.

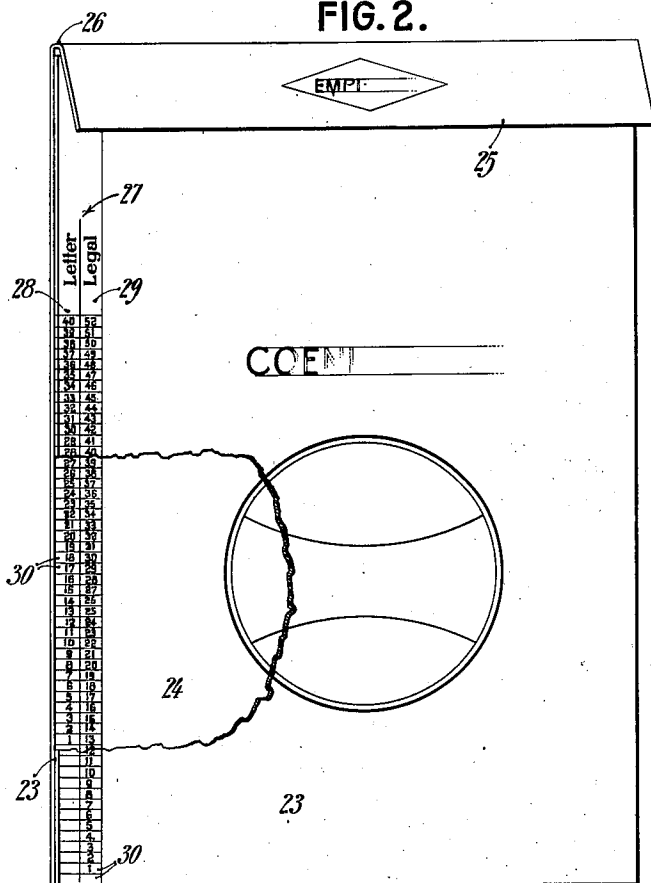
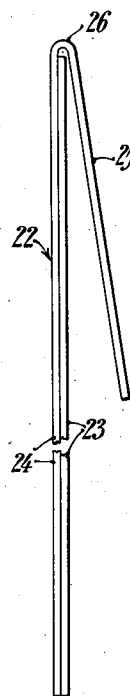


FIG. 3.



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TYPEWRITER BACKING SHEET

Application filed May 27, 1930. Serial No. 455,994.

This invention relates to a backing sheet used for manifolding purposes in a type-writing machine.

Heretofore it has been the practice to employ a sheet of rather tough paper which protects the platen against pitting from the types, and also, in some cases, slightly improves the clearness of the type-impressions upon the manifolded work-sheets. Such backings are only moderately efficient, and the consequence is that an undue proportion of manifolding is typed without any backing sheets.

An object of the present invention is to produce a backing sheet having high efficiency for manifolding, and great durability, and there is employed for this purpose a highly flexible thin sheet or film of celluloid, which has the characteristic of greatly increasing the clearness of the manifolded type-impressions, and increases the range of manifolding, permitting many more copies to be obtained upon the same typewriter platen as compared with the tough paper backings above referred to. This characteristic of the celluloid is due partly to its extreme smoothness, and partly to its great elasticity, while its toughness is at the same time extraordinary and its life is very long, and besides it possesses other valuable characteristics.

The celluloid backing sheet is one element of the present invention, and its excellent qualities are brought out by combining with it a sheet of paper, affording a cushion between the celluloid and the platen, the sheet of paper being moderately thick and of tough material, preferably a sheet which is similar to the paper backing sheet heretofore in use for manifolding. The combination of the very thin celluloid with the described paper reinforcement makes a manifolding aid which is far superior to prior manifolding backings.

The tough paper reinforcement of the combined sheet is extended above the celluloid,

and folded down over the top edge thereof, to form a fold into which to insert the leading edges of the work-sheets and carbons to be manifolded.

This fold serves as a leading-edge gage for the sheets, and is co-operative with a printed column or columns, each column divided into line-spaces, and the line-spaces being numbered beginning at the bottom of the page and running upwardly, so as to afford the operator an opportunity to ascertain how many more lines can be typed upon the work-sheet.

These numbers are combined with the celluloid manifolding surface by printing said numbers upon said paper reinforcement, which is adhesive to the celluloid throughout, the celluloid being transparent, so as to render the numbers visible, and the difficulty thereby being overcome due to the characteristic of the celluloid that it is not adapted for printing thereon, as the celluloid surface does not take printers' ink.

The column or columns of line-space numbers may be placed at one side edge of the combined sheet, and the remainder of the paper sheet may have an advertisement printed thereon, all being as visible as though it were printed upon the surface of the celluloid itself.

The celluloid sheet may be from two to five thousandths of an inch in thickness, more or less, so as to make it highly flexible for passing through the rolls of the typewriter, and also for accentuating its characteristic of clearing up the type-impressions. The celluloid part of the combination gives a hard surface, and the somewhat softer paper reinforcement of the combination serves as a sub-backing and gives the celluloid an opportunity to yield under the type-blows, this bringing out clearly the impressions of the types upon the work-sheets.

In this combination backing the foregoing advantages, due partly to the celluloid, and

partly to the softer paper reinforcement, are supplemented by the ability to feed the pack of work-sheets accurately through the typewriting machine. Work-sheets are liable to skew as they feed through a typewriting machine.

The smooth surface of celluloid, if directly in contact with the cylindrical typewriter platen would increase the skewing of the backing, together with the work-sheets, but this objection to the use of celluloid is overcome by the reinforcing portion of the combined sheet, said reinforcing portion being rough, and therefore adherent to the surface of the cylindrical platen, so that the combined backing, with the pack of work-sheets held securely by the head flap thereon, is advanced in a true course around the platen, and skewing is diminished or avoided.

The rear side of the paper reinforcement upon the celluloid sheet may be also used for printing other data. The sheets may be combined by means of Canada balsam, or other transparent, liquid cement or adhesive, so that, owing to the transparency of the celluloid and the transparency of the cement, the printing upon the paper reinforcement may be seen with perfect clearness.

The sheets may also be combined by welding them together, thereby eliminating the use of any liquid cement or other adhesives. This sheet-welding is accomplished by laying the thin highly-flexible celluloid sheet over the printed paper sheet and then heating the celluloid by means of a hot iron, to cause the celluloid to become softened. The celluloid in its softened condition grips the paper, so that upon cooling the celluloid remains firmly fixed to the paper. The pressure upon the heated paper and celluloid sheets is maintained during the cooling, and the paper and film become permanently united, even when no balsam or other cement is employed.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a perspective view of portions of a platen-carriage of an Underwood typewriting machine, my improved advertising backing sheet being shown in operative position on the platen of the machine.

Figure 2 is a front perspective view, broken away in part, of my improved backing sheet.

Figure 3 is a partial side view of my improved backing sheet, the thickness of the component elements of the sheet being exaggerated.

In an Underwood typewriting machine, types 10 strike against a platen 11 on a shaft 12, which is journaled in end plates 13 of a platen-frame generally designated as 14. For guiding a work-piece to the introductory side of the platen 11 and between the latter and lower feed-rolls 15, a rear paper-table 16 extends between the end plates 13. For conven-

ience in inserting a thick pack of superposed work-sheets 17 and interleaved carbons 18 around the platen from the rear, the lower feed-rolls 15 may be thrown off the platen by instrumentalities including a feed-roll-release lever 19. Also for adjusting a work-sheet 17, which has become skewed or out of square relatively to the printing line, it is desirable to throw off the feed-rolls 15. The platen 11 may be revolved by a finger-wheel 20 on each end of the shaft 12 or by line-spacing instrumentalities, not shown. For gaging a line of writing to the printing line of the platen, instrumentalities including wing-scales 21 are provided. The parts named above may be of the same construction as like parts in an Underwood standard typewriter.

The platen 11 is ordinarily made of semi-hard rubber, and after long hard service may become slightly pitted, especially if the hard steel types 10 are allowed to strike directly on the platen. It has been proposed to prevent this pitting by the use of a relatively thick auxiliary sheet of some suitable material next to the platen. Also such a sheet provided in some cases a better backing for the types to strike against than a platen which had become pitted.

Paper and cloth backing sheets have been proposed for typewriting machines, but they have not proved satisfactory. Among other objections to them, they are not firm enough, especially for manifold work. Backing sheets of celluloid have been tried which present a firm backing for the types to strike against, but have a serious fault of skewing easily when being fed around the platen, since the adherence between the slippery celluloid and the quite smooth platen and lower feed-rolls is poor. Also it is a relatively expensive and difficult matter to print any data or indicia on celluloid backing sheets, since they do not take printers' ink.

In carrying out my invention, I have provided a backing sheet with an outer work-face element consisting of a sheet of celluloid 23 and an inner platen-engaging element of tough flexible paper 24. The paper 24 underlies the celluloid 23 and provides positive adherence of the backing sheet 22 to the platen 11. The celluloid element or layer of my backing sheet preferably consists of a sheet of tough flexible transparent celluloid preferably from two to five thousandths of an inch thick, but may vary from these dimensions slightly. The paper element or layer of my backing sheet consists of a sheet of tough flexible paper, somewhat thicker than the celluloid sheet 23, and may be of the kind heretofore used as a backing sheet. The paper sheet 24 may be cemented to the lower face of the celluloid sheet throughout by a suitable transparent flexible cement or adhesive such as Canada balsam. The paper

sheet 24 may be made to stick or adhere strongly to the celluloid sheet 23 by pressing the sheets together firmly while sufficient heat is applied to soften the celluloid sheet.

5 The paper sheet 24 will be disposed to come against the soft rubber platen 11 when the backing sheet 22 is fed around the platen under the pack of work-sheets 17. The friction between the platen 11 and the paper sheet 10 24 is such that it prevents skewing of the backing sheet 22 as would be likely to occur if the celluloid sheet 23 were disposed next to the platen. The paper sheet 24 has the same width as the celluloid sheet 23, and is 15 ordinarily approximately an inch longer than the latter. The bottom edges of the sheets 23 and 24 are even, and the protruding portion of the paper sheet 24 is folded down over the celluloid sheet 23 to form a kind of flap 20 25.

The leading ends of the work-sheets 17 and carbon-sheets 18 are inserted under the flap 25, and their ends jogged against a hinge-portion 26, which integrally joins the flap to the sheet 23. This evens up the leading edges of the several work-sheets and carbons, and disposes them in a gaged relation to indicia 27, arranged in two parallel rows or columns 28 and 29 for work-sheets of letter size and legal size, respectively. The flap 25 thus serves as a gage as well as an eveners means. It is also useful for holding the work-sheets 17 and carbon-sheets 18 from slipping off the smooth slippery celluloid sheet 23 while 25 they are being assembled thereon to be inserted at the receiving side of the platen. To hold work-sheets 17 and carbons 18 on the smooth slippery surface of the celluloid-faced backing sheet 22, which has no flap like the 40 flap 25, would require more care and a harder grip.

The indicia 27, as illustrated in Figure 2, may include numerically-numbered rectangular figures or blocks 30, preferably printed 45 along the left edge of the paper sheet 24 to constitute the columns 28 and 29. The dimension of a block 30, measured in the lengthwise direction of the sheet 24, is equal to one line-space on the platen 11. The length 50 of the backing sheet 22 from its bottom edge to the hinge-portion 26 of the flap 25 slightly exceeds the length of a standard sheet of legal size paper. The width of the backing sheet, measured from the inner edge of the 55 inner column of indicia to the right edge of the backing sheet, is ordinarily slightly more than the usual width of a sheet of letter size or legal size paper.

A sheet of legal size paper properly positioned on the backing sheet 22 will extend 60 near the bottom edge of the latter, while a sheet of letter size paper will not extend so far. Therefore, it makes for convenience in determining how many more lines can be 65 typed on a legal size sheet to have the page-

end indicating figures in the inner column of squares 30 start at the bottom edge of the backing sheet to come next to the legal size paper, and the inner column 29 is preferably marked to indicate this by the word "Legal" 70 (see Figure 2).

The nearest block 30 to the bottom in the inner column 29 bears the figure "1" and the upwardly-following blocks bear figures corresponding to their locations relative to the 75 bottom edge of the backing sheet.

The block 30 of the outer column 28 which comes opposite the bottom edge of a usual sheet of letter paper, when its upper edge abuts squarely against the hinge-portion 26 80 of the flap 25, bears the figure "1" and the upwardly-following blocks are numbered in sequence. The outer column 28 is preferably marked by the word "Letter".

To help an operator to determine more 85 quickly which column of indicia applies to the sheet she is typing, especially when the backing sheet 22 and overlying work-sheet 17 are disposed around the platen, and only a few of the indicia can be readily seen, the 90 figures in the "Letter" column are printed in a different color from those in the "Legal" column.

It can be readily seen that the tough transparent celluloid sheet 23 positively protects 95 the page-end indicia 30 printed on the paper sheet 24 from becoming soiled and damaged, while it permits them to be fully visible. The transparent celluloid sheet also serves to protect printed advertising matter which it may 100 be desirable to have appear on the face of the paper sheet 24, and which, without the protection of the celluloid sheet, would soon become more or less soiled and lose its attractiveness and value. The use of the paper 105 sheet 24 in my backing sheet permits advertisements to be printed on the under side of my backing sheet. These advertisements may be such that their permanence is not 110 essential.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. A backing sheet for a typewriting machine having a revoluble platen, including, in combination, a sheet of thin pliable celluloid, and a sheet of paper material cemented to said celluloid sheet and having a surface 120 rougher than said celluloid sheet, said paper sheet underlying said celluloid sheet for engaging next to said platen whereby skewing of said celluloid sheet is prevented.

2. A backing sheet for a revoluble-platen 125 typewriting machine, including, in combination, a sheet of firm relatively smooth flexible celluloid to be disposed next to a plurality of superposed work-sheets interleaved with carbon for aiding the manifolding of said work- 130

sheets, and a sheet of paper cemented to the under face of said celluloid sheet, said paper sheet having a relatively rough surface for frictional engagement with said platen.

5 3. A highly-flexible work backing type-writer sheet, consisting of a smooth transparent film of celluloid forming a facing upon a paper backing sheet which is relatively rough, and permanently united thereto.

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